

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: STREETWORKS

Report Number: P362470

Luminaire Tested: NVN-SA6C-750-U-AFL

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2019
Report Number: P362470
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-29)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: STREETWORKS
Catalog Number: NVN-SA6C-750-U-AFL
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 43857 lumens
Efficiency: N/A
Efficacy: 131.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short
BUG Rating: B3 - U0 - G3

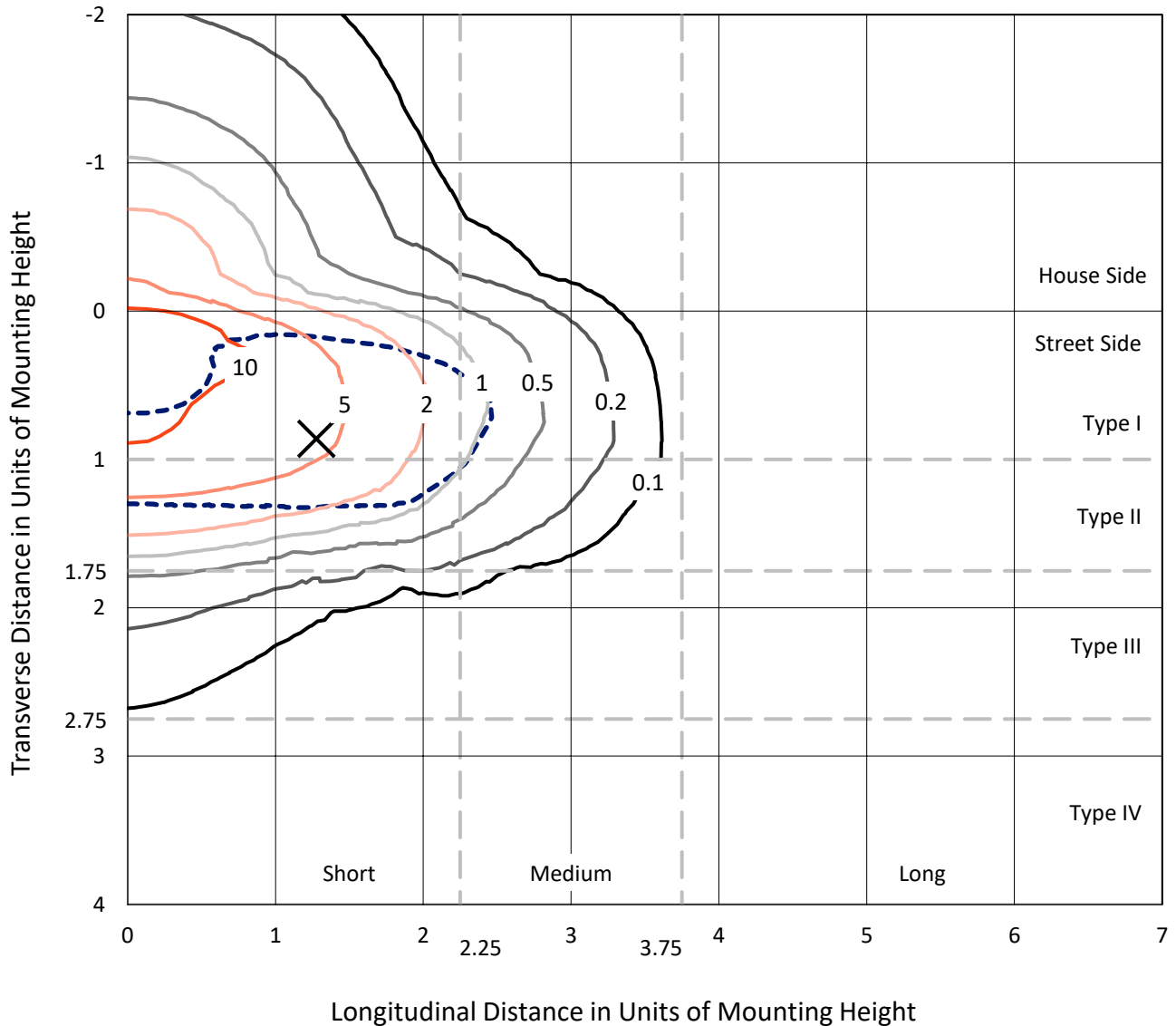
Input Watts (W): 333
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P362470
 CATALOG NUMBER: NVN-SA6C-750-U-AFL

Iso-Footcandle Lines of Horizontal Illumination

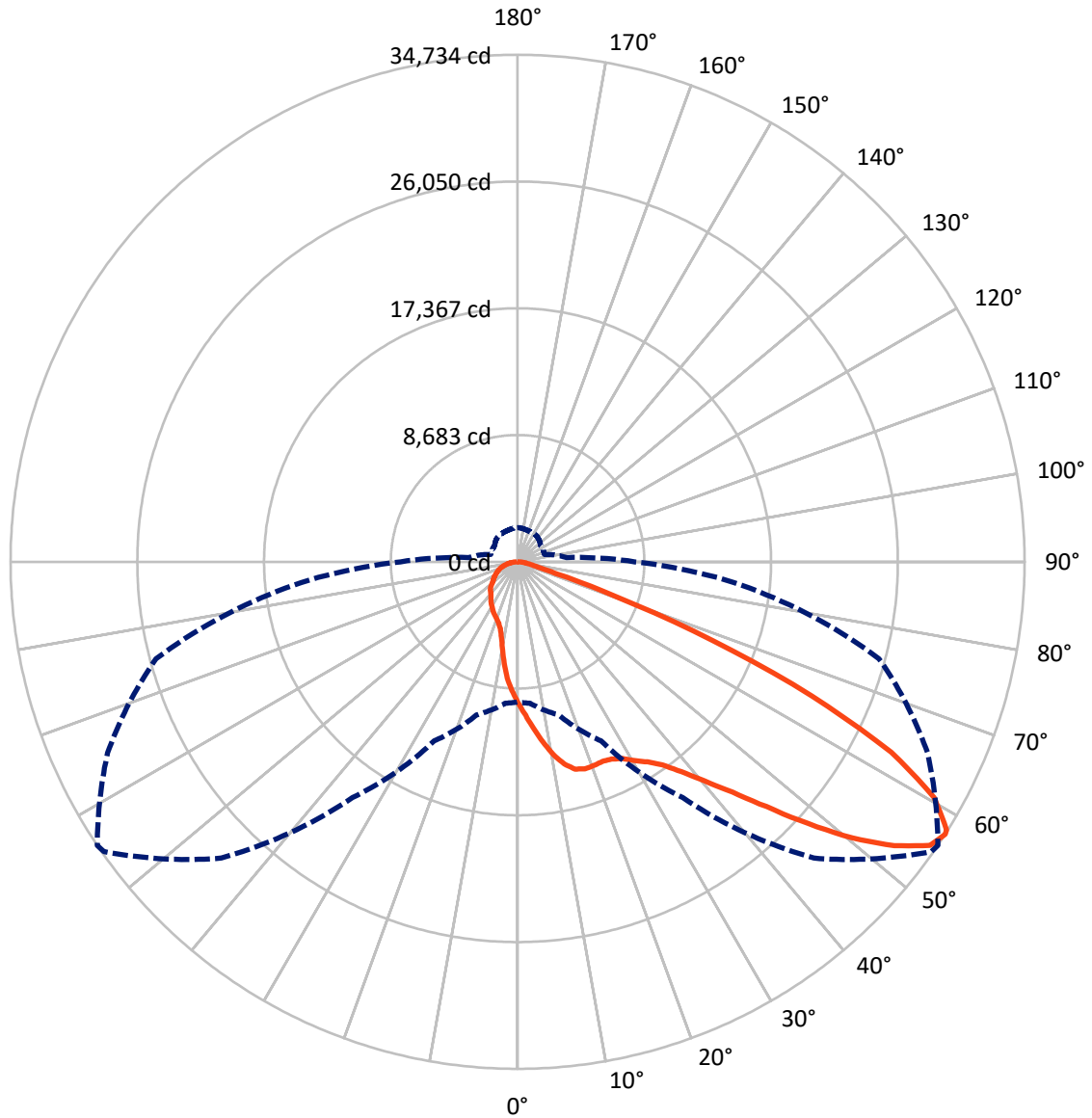
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 15 fc
 Type II - Short - N/A

REPORT NUMBER: P362470
CATALOG NUMBER: NVN-SA6C-750-U-AFL

Luminous Intensity Polar Plot



— Vertical Plane Through 56-Deg Lateral - - - Horizontal Cone Through 57-Deg Vertical

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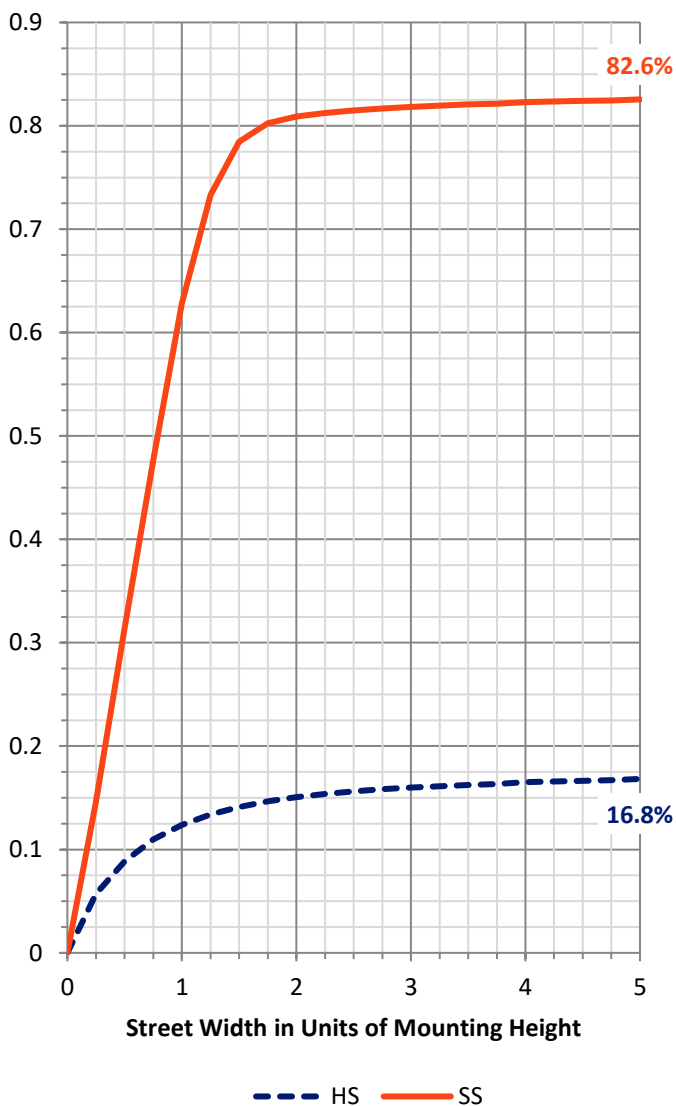
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 7560.0 | 0.0 | 7560.0 |
| | % Fixture | 17.2 | 0.0 | 17.2 |
| Street Side | Lumens | 36297.0 | 0.0 | 36297.0 |
| | % Fixture | 82.8 | 0.0 | 82.8 |
| Total | Lumens | 43857.0 | 0.0 | 43857.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 929.2 | 2.1 |
| 10°-20° | 2627.1 | 6.0 |
| 20°-30° | 4279.1 | 9.8 |
| 30°-40° | 6396.8 | 14.6 |
| 40°-50° | 9702.5 | 22.1 |
| 50°-60° | 10874.8 | 24.8 |
| 60°-70° | 6423.1 | 14.6 |
| 70°-80° | 2104.4 | 4.8 |
| 80°-90° | 519.9 | 1.2 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 43857.0 | 100.0 |
| 0°-180° | 43857.0 | 100.0 |

Coefficient of Utilization

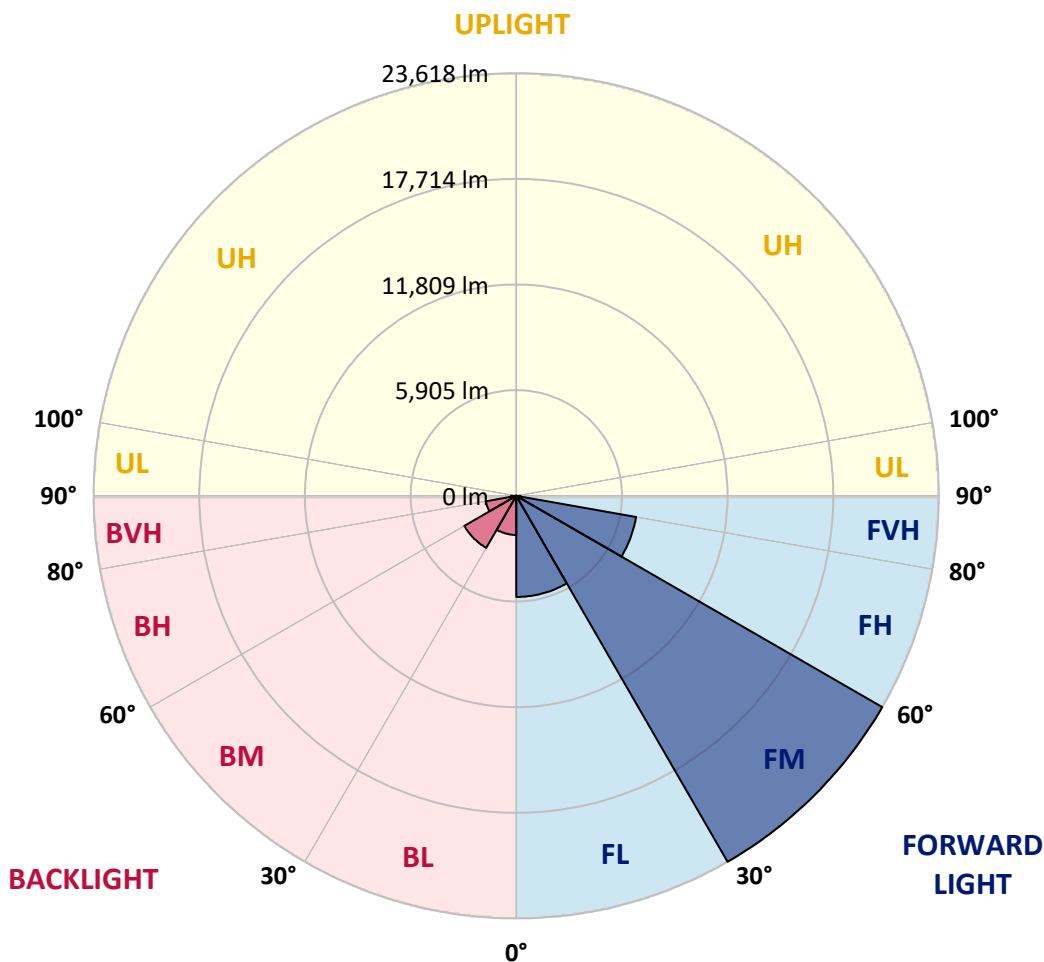


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 CATALOG NUMBER: NVN-SA6C-750-U-AFL

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|---------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 5649.4 | 12.9 | | | |
| FM (30°-60°) | 23618.4 | 53.9 | | | |
| FH (60°-80°) | 6800.2 | 15.5 | | | G3/7500 |
| FVH (80°-90°) | 228.9 | 0.5 | | | G3/500 |
| BL (0°-30°) | 2186.0 | 5.0 | B3/2500 | | |
| BM (30°-60°) | 3355.6 | 7.7 | B3/5000 | | |
| BH (60°-80°) | 1727.4 | 3.9 | B3/2500 | | G3/2500 |
| BVH (80°-90°) | 291.0 | 0.7 | | | G3/500 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3
 Type II Short





REPORT NUMBER: P362470

CATALOG NUMBER: NVN-SA6C-750-U-AFL

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 56° | 65° | 75° | 85° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 |
| 2.5° | 11169.9 | 11272.4 | 11227.2 | 11070.4 | 10949.9 | 10779.6 | 10589.6 | 10532.4 | 10331.9 | 10107.3 | 9837.5 |
| 5° | 12937.9 | 12886.6 | 12812.8 | 12568.6 | 12310.9 | 12010.9 | 11534.7 | 11459.3 | 11013.2 | 10505.2 | 9968.7 |
| 7.5° | 13944.7 | 13940.2 | 13896.5 | 13753.3 | 13518.2 | 13126.3 | 12552.0 | 12463.1 | 11789.4 | 10972.5 | 10140.5 |
| 10° | 13798.5 | 13787.9 | 13860.3 | 14009.5 | 14080.3 | 13999.0 | 13515.1 | 13426.2 | 12598.8 | 11489.4 | 10339.4 |
| 12.5° | 12968.0 | 12974.0 | 13090.1 | 13403.6 | 13830.1 | 14342.6 | 14264.2 | 14220.5 | 13438.3 | 12074.2 | 10580.6 |
| 15° | 12321.4 | 12335.0 | 12426.9 | 12699.7 | 13203.1 | 14133.1 | 14719.4 | 14734.5 | 14250.7 | 12719.3 | 10862.5 |
| 17.5° | 12038.1 | 12066.7 | 12108.9 | 12300.3 | 12761.5 | 13715.6 | 14827.9 | 14909.3 | 14962.1 | 13388.5 | 11133.7 |
| 20° | 12128.5 | 12155.6 | 12167.7 | 12289.8 | 12668.1 | 13462.4 | 14752.6 | 14898.8 | 15507.7 | 14018.5 | 11405.0 |
| 22.5° | 12533.9 | 12550.5 | 12558.1 | 12589.7 | 12883.6 | 13534.7 | 14702.8 | 14856.6 | 15902.6 | 14583.7 | 11610.0 |
| 25° | 13206.2 | 13194.1 | 13145.9 | 13105.2 | 13302.6 | 13821.1 | 14817.4 | 14963.6 | 16223.6 | 15096.2 | 11744.2 |
| 27.5° | 14011.0 | 13995.9 | 13902.5 | 13791.0 | 13904.0 | 14267.2 | 15147.4 | 15263.5 | 16511.5 | 15575.5 | 11812.0 |
| 30° | 14977.1 | 14937.9 | 14761.6 | 14629.0 | 14672.7 | 14936.4 | 15691.5 | 15797.1 | 16956.1 | 16119.6 | 11878.3 |
| 32.5° | 16094.0 | 16051.8 | 15797.1 | 15577.0 | 15577.0 | 15797.1 | 16252.2 | 16339.6 | 17332.9 | 16734.5 | 11985.3 |
| 35° | 17492.7 | 17439.9 | 17108.3 | 16739.1 | 16635.1 | 16746.6 | 17016.4 | 17078.2 | 18011.1 | 17509.2 | 12179.8 |
| 37.5° | 19141.5 | 19070.7 | 18641.2 | 18146.8 | 17919.2 | 17913.2 | 18107.6 | 18234.2 | 19094.8 | 18526.6 | 12509.8 |
| 40° | 20795.0 | 20745.2 | 20369.9 | 19981.1 | 19534.9 | 19391.7 | 19691.7 | 19730.9 | 20511.6 | 19789.6 | 12931.8 |
| 42.5° | 22073.1 | 22064.0 | 21994.7 | 22045.9 | 21589.3 | 21299.9 | 21535.0 | 21566.6 | 22241.9 | 21156.7 | 13381.0 |
| 45° | 22748.3 | 22763.4 | 23099.5 | 23844.0 | 24012.8 | 23801.8 | 23917.9 | 23926.9 | 24219.3 | 22535.8 | 13792.5 |
| 47.5° | 22207.2 | 22285.6 | 23135.6 | 24801.1 | 26183.2 | 26884.1 | 26691.2 | 26802.7 | 26136.5 | 23720.4 | 14115.0 |
| 50° | 20098.6 | 20195.1 | 21642.0 | 24374.6 | 27196.1 | 29866.8 | 29765.9 | 29740.2 | 27682.9 | 24588.6 | 14289.8 |
| 52.5° | 17486.6 | 17562.0 | 18755.7 | 22157.5 | 26453.0 | 31515.7 | 32442.7 | 32310.0 | 29057.5 | 25238.2 | 14323.0 |
| 55° | 13509.1 | 13626.7 | 14770.6 | 17732.3 | 23447.6 | 30885.7 | 34411.1 | 34292.0 | 30310.0 | 25578.8 | 14283.8 |
| 57° | 9603.9 | 9727.5 | 10864.0 | 13533.2 | 19724.8 | 28704.8 | 34607.0 | 34733.6 | 30986.7 | 25636.1 | 14327.5 |
| 57.5° | 8570.0 | 8696.6 | 9822.5 | 12414.9 | 18564.3 | 27916.5 | 34438.2 | 34649.2 | 31108.8 | 25627.1 | 14351.6 |
| 60° | 4315.1 | 4363.4 | 5080.8 | 6930.1 | 11735.1 | 22568.9 | 32236.2 | 32780.3 | 31218.8 | 25183.9 | 14455.6 |
| 62.5° | 2682.8 | 2648.2 | 2625.6 | 3192.3 | 5709.3 | 14966.6 | 27691.9 | 28739.4 | 29113.2 | 24110.8 | 14203.9 |
| 65° | 2358.8 | 2294.0 | 2045.3 | 2000.1 | 2521.6 | 7269.3 | 20853.7 | 22157.5 | 24614.2 | 22419.7 | 13604.1 |
| 67.5° | 2215.6 | 2152.3 | 1872.0 | 1703.1 | 1704.7 | 2881.8 | 12946.9 | 14414.9 | 19174.7 | 19560.5 | 12188.8 |
| 70° | 2067.9 | 2010.6 | 1748.4 | 1549.4 | 1451.4 | 1596.1 | 5956.5 | 7070.3 | 12499.3 | 15375.0 | 10187.2 |
| 72.5° | 1878.0 | 1838.8 | 1590.1 | 1385.1 | 1281.1 | 1195.2 | 2280.4 | 2693.4 | 7236.1 | 10325.9 | 7074.8 |
| 75° | 1679.0 | 1642.9 | 1430.3 | 1234.4 | 1107.8 | 940.5 | 1284.1 | 1383.6 | 3676.1 | 5282.8 | 3483.2 |
| 77.5° | 1460.5 | 1439.4 | 1272.1 | 1091.2 | 990.2 | 779.2 | 908.8 | 957.1 | 1576.5 | 2265.3 | 1746.9 |
| 80° | 1162.1 | 1202.8 | 1112.3 | 972.1 | 878.7 | 624.0 | 643.6 | 675.2 | 917.9 | 1106.3 | 991.7 |
| 82.5° | 756.6 | 827.5 | 871.2 | 789.8 | 723.5 | 491.3 | 462.7 | 476.3 | 598.4 | 675.2 | 431.1 |
| 85° | 315.0 | 354.2 | 572.7 | 517.0 | 480.8 | 358.7 | 310.5 | 316.5 | 370.8 | 384.3 | 176.3 |
| 87.5° | 140.2 | 149.2 | 251.7 | 236.6 | 203.5 | 123.6 | 132.6 | 144.7 | 197.4 | 186.9 | 67.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P362470
 CATALOG NUMBER: NVN-SA6C-750-U-AFL

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 | 9727.5 |
| 2.5° | 9736.6 | 9610.0 | 9392.9 | 9153.3 | 8957.3 | 8800.6 | 8642.3 | 8533.8 | 8407.2 | 8339.4 | 8304.7 |
| 5° | 9744.1 | 9495.4 | 9038.7 | 8570.0 | 8151.0 | 7768.2 | 7403.4 | 7123.1 | 6860.8 | 6719.1 | 6679.9 |
| 7.5° | 9775.8 | 9402.0 | 8663.4 | 7891.7 | 7147.2 | 6467.4 | 5942.9 | 5614.4 | 5377.7 | 5272.2 | 5242.1 |
| 10° | 9801.4 | 9291.9 | 8199.2 | 7056.7 | 6043.9 | 5355.1 | 4948.2 | 4764.3 | 4682.9 | 4669.3 | 4655.8 |
| 12.5° | 9861.7 | 9178.9 | 7710.9 | 6185.6 | 5186.3 | 4710.0 | 4568.3 | 4556.3 | 4578.9 | 4612.1 | 4612.1 |
| 15° | 9956.6 | 9067.4 | 7153.2 | 5438.0 | 4640.7 | 4473.4 | 4502.0 | 4568.3 | 4630.1 | 4681.4 | 4688.9 |
| 17.5° | 10025.9 | 8930.2 | 6553.3 | 4839.6 | 4349.8 | 4395.0 | 4497.5 | 4591.0 | 4654.3 | 4704.0 | 4708.5 |
| 20° | 10075.7 | 8717.7 | 5912.8 | 4383.0 | 4182.5 | 4322.7 | 4450.8 | 4533.7 | 4577.4 | 4627.1 | 4634.7 |
| 22.5° | 10050.1 | 8432.8 | 5344.6 | 4055.9 | 4046.9 | 4217.2 | 4339.3 | 4438.7 | 4405.6 | 4357.3 | 4389.0 |
| 25° | 9926.5 | 8041.0 | 4759.8 | 3811.7 | 3903.7 | 4075.5 | 4226.2 | 4159.9 | 4048.4 | 4027.3 | 4039.3 |
| 27.5° | 9706.4 | 7540.6 | 4218.7 | 3585.6 | 3737.9 | 3944.4 | 3935.3 | 3869.0 | 3829.8 | 3802.7 | 3819.3 |
| 30° | 9469.8 | 6998.0 | 3745.4 | 3388.2 | 3554.0 | 3724.3 | 3689.6 | 3688.1 | 3649.0 | 3605.2 | 3626.3 |
| 32.5° | 9236.2 | 6452.4 | 3370.1 | 3225.4 | 3415.3 | 3437.9 | 3513.3 | 3535.9 | 3459.0 | 3367.1 | 3361.1 |
| 35° | 9032.7 | 5936.9 | 3085.3 | 3077.7 | 3248.0 | 3251.0 | 3361.1 | 3329.4 | 3138.0 | 3043.1 | 3043.1 |
| 37.5° | 8880.5 | 5422.9 | 2868.2 | 2945.1 | 3028.0 | 3106.4 | 3162.1 | 3031.0 | 2999.3 | 2946.6 | 2945.1 |
| 40° | 8814.2 | 4970.8 | 2732.6 | 2844.1 | 2872.7 | 2972.2 | 2829.0 | 2880.3 | 2895.3 | 2868.2 | 2868.2 |
| 42.5° | 8744.8 | 4577.4 | 2615.0 | 2767.2 | 2762.7 | 2749.1 | 2676.8 | 2743.1 | 2803.4 | 2804.9 | 2800.4 |
| 45° | 8675.5 | 4238.3 | 2511.0 | 2602.9 | 2666.3 | 2520.1 | 2533.6 | 2604.5 | 2688.9 | 2719.0 | 2719.0 |
| 47.5° | 8598.6 | 3970.0 | 2416.1 | 2429.6 | 2527.6 | 2429.6 | 2419.1 | 2473.3 | 2572.8 | 2621.0 | 2631.6 |
| 50° | 8429.8 | 3728.8 | 2307.5 | 2277.4 | 2304.5 | 2337.7 | 2346.7 | 2372.3 | 2482.4 | 2559.2 | 2577.3 |
| 52.5° | 8196.2 | 3513.3 | 2168.9 | 2137.2 | 2137.2 | 2262.3 | 2304.5 | 2312.1 | 2405.5 | 2497.4 | 2515.5 |
| 55° | 8001.8 | 3376.1 | 2025.7 | 2019.7 | 2013.6 | 2182.4 | 2254.8 | 2266.8 | 2331.7 | 2404.0 | 2413.0 |
| 57° | 8015.3 | 3365.6 | 1915.7 | 1921.7 | 1920.2 | 2101.0 | 2208.1 | 2233.7 | 2266.8 | 2328.6 | 2339.2 |
| 57.5° | 8022.9 | 3373.1 | 1891.5 | 1894.6 | 1893.1 | 2078.4 | 2194.5 | 2223.1 | 2248.8 | 2313.6 | 2324.1 |
| 60° | 8135.9 | 3392.7 | 1793.6 | 1760.4 | 1768.0 | 1957.9 | 2117.6 | 2153.8 | 2170.4 | 2256.3 | 2269.9 |
| 62.5° | 7968.6 | 3305.3 | 1715.2 | 1635.3 | 1635.3 | 1831.3 | 2010.6 | 2067.9 | 2093.5 | 2209.6 | 2232.2 |
| 65° | 7483.3 | 3059.6 | 1623.3 | 1493.6 | 1508.7 | 1704.7 | 1882.5 | 1976.0 | 2015.1 | 2159.8 | 2183.9 |
| 67.5° | 6734.2 | 2774.8 | 1525.3 | 1367.0 | 1382.1 | 1572.0 | 1749.9 | 1850.9 | 1912.6 | 2105.6 | 2125.2 |
| 70° | 5759.0 | 2426.6 | 1392.7 | 1232.9 | 1251.0 | 1427.3 | 1593.1 | 1707.7 | 1799.6 | 2054.3 | 2060.4 |
| 72.5° | 4245.8 | 1989.5 | 1207.3 | 1085.2 | 1104.8 | 1258.5 | 1434.9 | 1567.5 | 1691.1 | 1926.2 | 1923.2 |
| 75° | 2524.6 | 1555.4 | 1002.3 | 936.0 | 949.5 | 1092.7 | 1291.7 | 1452.9 | 1638.3 | 1876.5 | 1905.1 |
| 77.5° | 1531.3 | 1171.1 | 816.9 | 783.7 | 800.3 | 946.5 | 1189.2 | 1361.0 | 1615.7 | 1769.5 | 1760.4 |
| 80° | 925.4 | 836.5 | 652.6 | 631.5 | 648.1 | 809.4 | 1100.3 | 1291.7 | 1412.3 | 1511.7 | 1511.7 |
| 82.5° | 483.8 | 510.9 | 479.3 | 462.7 | 485.3 | 657.1 | 1000.8 | 1127.4 | 1248.0 | 1071.6 | 1000.8 |
| 85° | 197.4 | 266.8 | 290.9 | 289.4 | 302.9 | 455.2 | 863.6 | 964.6 | 804.8 | 764.2 | 782.2 |
| 87.5° | 66.3 | 113.0 | 141.7 | 122.1 | 128.1 | 286.4 | 598.4 | 465.7 | 553.1 | 385.8 | 366.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-4-R4

Test Date: 10/02/2019

Luminaire Tested: SA1C-750-U-5WQ

Data in this report applies to families of products SA1C-760-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-4-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-750-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-4-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. ROADWAY AND AREA LUMINAIRE. (1) 70 CRI, 5000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 4884 | CRI (Ra): | 73.5 | R9: | -28.4 |
| CIE u': | 0.2101 | R1: | 70.5 | R10: | 48.6 |
| CIE v': | 0.4904 | R2: | 77.7 | R11: | 73.2 |
| Duv: | 0.0037 | R3: | 84.6 | R12: | 50.7 |
| CIE x: | 0.3493 | R4: | 74.7 | R13: | 71.2 |
| CIE y: | 0.3624 | R5: | 71.9 | R14: | 91.4 |
| CIE z: | 0.2884 | R6: | 70.7 | | |
| Peak Wavelength (nm): | 444 | R7: | 81.2 | | |
| Dominant Wavelength (nm): | 571 | R8: | 56.9 | | |
| Purity: | 13.7 | | | | |
| Rf: | 74.9 | | | | |
| Rg: | 96.3 | | | | |



Test Conditions

Stabilization Time: 240M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

REPORT NUMBER: SP1-1908-441-4-R4

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

REPORT NUMBER: SP1-1908-441-4-R4

CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 5000K 4-step quadrangle

REPORT NUMBER: SP1-1908-441-4-R4

Photopic Flux vs. Wavelength



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 13493.5 S/P: 1.77

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 5378.9 M/P: 0.71

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 2945 | NR | 490 | 37941 | NR | 620 | 88803 | NR | 750 | 3908 | NR | 880 | 2997 | NR |
| 365 | 2596 | NR | 495 | 48525 | NR | 625 | 80578 | NR | 755 | 3988 | NR | 885 | 2927 | NR |
| 370 | 2732 | NR | 500 | 60609 | NR | 630 | 73127 | NR | 760 | 3335 | NR | 890 | 2649 | NR |
| 375 | 2894 | NR | 505 | 72036 | NR | 635 | 66244 | NR | 765 | 3438 | NR | 895 | 2828 | NR |
| 380 | 2822 | NR | 510 | 82168 | NR | 640 | 59440 | NR | 770 | 3427 | NR | 900 | 1407 | NR |
| 385 | 2394 | NR | 515 | 90898 | NR | 645 | 52864 | NR | 775 | 2759 | NR | 905 | 2224 | NR |
| 390 | 2370 | NR | 520 | 97142 | NR | 650 | 47085 | NR | 780 | 2340 | NR | 910 | 2905 | NR |
| 395 | 2267 | NR | 525 | 103255 | NR | 655 | 41789 | NR | 785 | 2412 | NR | 915 | 3350 | NR |
| 400 | 2262 | NR | 530 | 106697 | NR | 660 | 37064 | NR | 790 | 1999 | NR | 920 | 3114 | NR |
| 405 | 3000 | NR | 535 | 110081 | NR | 665 | 32299 | NR | 795 | 2054 | NR | 925 | 2834 | NR |
| 410 | 5324 | NR | 540 | 112494 | NR | 670 | 28142 | NR | 800 | 2331 | NR | 930 | 2271 | NR |
| 415 | 10725 | NR | 545 | 115513 | NR | 675 | 24505 | NR | 805 | 2648 | NR | 935 | 2228 | NR |
| 420 | 22128 | NR | 550 | 117203 | NR | 680 | 21162 | NR | 810 | 2485 | NR | 940 | 2833 | NR |
| 425 | 44095 | NR | 555 | 119753 | NR | 685 | 18400 | NR | 815 | 2409 | NR | 945 | 2941 | NR |
| 430 | 77002 | NR | 560 | 122602 | NR | 690 | 16065 | NR | 820 | 2221 | NR | 950 | 2323 | NR |
| 435 | 119881 | NR | 565 | 124314 | NR | 695 | 13860 | NR | 825 | 1562 | NR | 955 | 1667 | NR |
| 440 | 164454 | NR | 570 | 126775 | NR | 700 | 12177 | NR | 830 | 2249 | NR | 960 | 749 | NR |
| 445 | 179997 | NR | 575 | 127511 | NR | 705 | 10757 | NR | 835 | 2573 | NR | 965 | 2669 | NR |
| 450 | 142822 | NR | 580 | 127577 | NR | 710 | 9601 | NR | 840 | 2764 | NR | 970 | 3968 | NR |
| 455 | 90008 | NR | 585 | 126153 | NR | 715 | 8944 | NR | 845 | 3109 | NR | 975 | 3886 | NR |
| 460 | 60557 | NR | 590 | 123678 | NR | 720 | 7947 | NR | 850 | 2963 | NR | 980 | 2788 | NR |
| 465 | 43305 | NR | 595 | 119774 | NR | 725 | 7062 | NR | 855 | 2336 | NR | 985 | 3496 | NR |
| 470 | 31089 | NR | 600 | 115733 | NR | 730 | 6004 | NR | 860 | 2118 | NR | 990 | 2913 | NR |
| 475 | 26278 | NR | 605 | 109231 | NR | 735 | 5594 | NR | 865 | 3144 | NR | 995 | 4659 | NR |
| 480 | 27060 | NR | 610 | 102408 | NR | 740 | 5165 | NR | 870 | 3069 | NR | 1000 | 1308 | NR |
| 485 | 30698 | NR | 615 | 96015 | NR | 745 | 4687 | NR | 875 | 3311 | NR | | | |

REPORT NUMBER: SP1-1908-441-4-R4

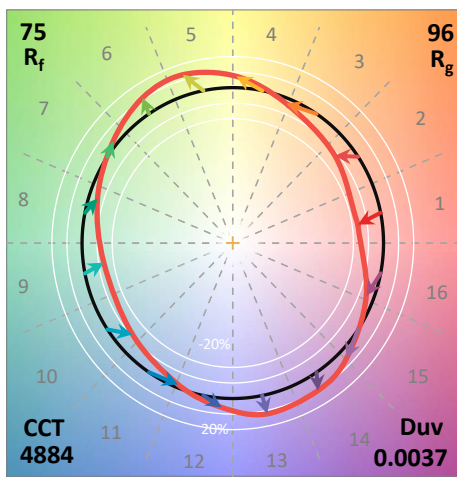
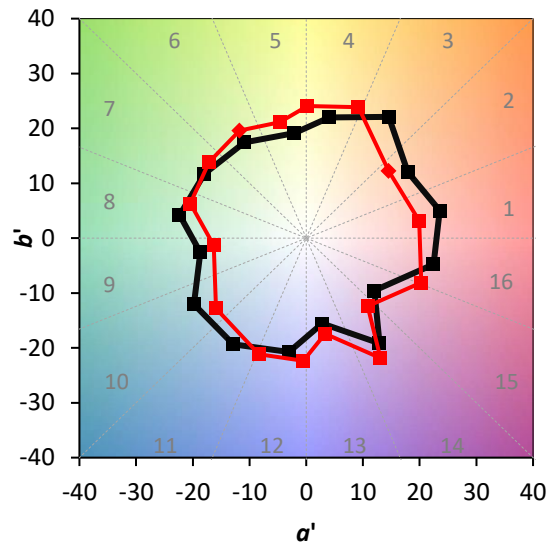
TM-30-18

Summary

$R_f = 74.9$
 $R_g = 96.3$
 CIE $R_a = 73.5$
 $R_g = -28.4$



Color Vector Graphics



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Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 85 | CES26 = 61 | CES51 = 90 | CES76 = 52 |
| CES02 = 60 | CES27 = 84 | CES52 = 91 | CES77 = 71 |
| CES03 = 30 | CES28 = 81 | CES53 = 79 | CES78 = 54 |
| CES04 = 69 | CES29 = 58 | CES54 = 83 | CES79 = 80 |
| CES05 = 46 | CES30 = 67 | CES55 = 83 | CES80 = 77 |
| CES06 = 50 | CES31 = 63 | CES56 = 73 | CES81 = 77 |
| CES07 = 39 | CES32 = 59 | CES57 = 72 | CES82 = 90 |
| CES08 = 38 | CES33 = 69 | CES58 = 73 | CES83 = 86 |
| CES09 = 29 | CES34 = 69 | CES59 = 88 | CES84 = 88 |
| CES10 = 73 | CES35 = 83 | CES60 = 93 | CES85 = 84 |
| CES11 = 56 | CES36 = 95 | CES61 = 88 | CES86 = 75 |
| CES12 = 61 | CES37 = 78 | CES62 = 85 | CES87 = 78 |
| CES13 = 41 | CES38 = 76 | CES63 = 77 | CES88 = 79 |
| CES14 = 74 | CES39 = 93 | CES64 = 74 | CES89 = 75 |
| CES15 = 70 | CES40 = 86 | CES65 = 67 | CES90 = 77 |
| CES16 = 46 | CES41 = 87 | CES66 = 69 | CES91 = 89 |
| CES17 = 49 | CES42 = 78 | CES67 = 67 | CES92 = 66 |
| CES18 = 55 | CES43 = 75 | CES68 = 73 | CES93 = 80 |
| CES19 = 71 | CES44 = 99 | CES69 = 81 | CES94 = 57 |
| CES20 = 64 | CES45 = 83 | CES70 = 63 | CES95 = 71 |
| CES21 = 85 | CES46 = 81 | CES71 = 60 | CES96 = 78 |
| CES22 = 77 | CES47 = 80 | CES72 = 86 | CES97 = 85 |
| CES23 = 91 | CES48 = 72 | CES73 = 53 | CES98 = 75 |
| CES24 = 90 | CES49 = 81 | CES74 = 96 | CES99 = 62 |
| CES25 = 71 | CES50 = 89 | CES75 = 58 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)